The GROWTH of a GREAT PORT



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HARBOUR COMMISSIONERS OF MONTREAL

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OF MONTREAL

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THE GROWTH OF A GREAT PORT





A partial view of
THE CITY OF
MONTREAL
and MONTREAL HARBOUR

showing ocean-going ships of every nationality, busily loading grain and general cargo.

Montreal. Board of Harbor Commissioners

THE GROWTH OF A GREAT PORT

DURING the 1926 season of navigation 1,421 ocean-going vessels, having a net registered tonnage of 4,221,730 tons, sailed from the Harbour of Montreal.

HARBOUR COMMISSIONERS OF MONTREAL

1927

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General Offices
OF THE
Harbour Commissioners
OF MONTREAL

INTRODUCTORY

THIS year of 1927 is Canada's sixtieth birthday—the Diamond Jubilee of Confederation. Until 1867, what is now the Dominion consisted of four separate provinces—disunited, scattered, and unlinked by any tie except their common British citizenship. For many years the efforts of public-spirited men in many parts of the country had been devoted to bringing the provinces together into a union that should express their own desire for greater statehood and greater self-government.

Those efforts reached fruition in 1867, when, with the passage of necessary legislation, the Dominion of Canada came into being. Its component parts in that year were the provinces of Ontario, Quebec, Nova Scotia, and New Brunswick; but through the wise provisions made for future expansion, other provinces from time to time joined the Federation or were created from territories—Manitoba in 1870, British Columbia in 1871, Prince Edward Island in 1873, Alberta and Saskatchewan in 1905.

By this remarkable foresight, Confederation laid the foundations for the development and prosperity of Canada from that date. Since 1867 the nation has travelled far. From a series of obscure provinces it has become a powerful state; and there is no Canadian who in this year of Jubilee does not reverence the statesmanship of the wise and noble men whom we call "The Fathers of Confederation."

Linked with the growth of Canada has been the growth of its largest and most important city—Montreal. The city of Montreal is important not only because of its own great commercial, industrial and financial significance, but because it is one of the world's greatest seaports. Situated on the St. Lawrence River, that unique inland waterway that swells out to join the ocean, there passes over its wharves every year an enormous traffic of people and merchandise. Eastbound, the products of Canada find world-markets through the national Port of Montreal; westbound, those of the Old World, of the Atlantic and Pacific Coasts, come in exchange.

Montreal is a pivot of world-commerce, and the Commissioners have availed themselves of the opportunity of presenting this book to those interested in "The Growth of a Great Port."

THE HARBOUR COMMISSIONERS OF MONTREAL

W. L. McDougald

President.

Hilton L. Heney,

E. Macnaughton

CANADA *and the* ST. LAWRENCE

~ *the River of Discovery*

MONTREAL is situated at the head of sea-going navigation on that majestic and noble waterway, the St. Lawrence River, 1000 miles from the sea. The St. Lawrence occupies a unique position amongst the rivers of the world and has been from time immemorial the gateway of North America.

It was the path of discovery—the route by which brave French explorers penetrated to the heart of this continent long before the English settlers farther south had obtained more than a precarious footing upon the Atlantic seaboard. The shores of the St. Lawrence were not the first parts of North America seen by white men, for Norsemen, Italians and Spaniards had sailed up and down its coast for five centuries from Greenland to the West Indies. But when the tide of European exploration definitely turned westward, following the path of the setting sun to new and wonderful countries of untold riches, the route to the St. Lawrence River was one of the two courses which it followed.

Not only did the St. Lawrence River serve Jacques Cartier, Champlain, Maisonneuve and other discoverers of Canada itself. Its three early settlements—at Quebec, Montreal and Trois-Rivieres—were the rendezvous for those far-faring spirits—heroic missionaries, soldiers of fortune, voyageurs, coureurs de bois, humble woodsmen-traders—who carried Christianity and the fleur-de-lys into the vast unknown wilderness. Such intrepid pioneers as DuLuth, Cadillac, La Salle, Joliet, Hennepin and a hundred others who paddled up the St. Lawrence left their names indelibly written in the geography of America.

Equally notable is the St. Lawrence as a river. Of its beauty, its maple forests, its rocky headlands, its peaceful farmlands and village churches, every traveller is loud in praise; as



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

Looking east from Shed 24. Showing the broad reach of the St. Lawrence River at this point.

72752

a waterway it is the outlet of the five Great Lakes of the North American continent, and drains an area of 510,000 square miles. From its source, in its first springs at the head of Lake Superior, to the outer end of the Strait of Belle Isle, the St. Lawrence system is 2,340 miles long; from the head of Lake Ontario to where it finally merges into the Gulf of St. Lawrence it has a length of about 850 miles, reaching at the Gulf a width of about 90 miles. Although it begins in Ontario, and actually for a short distance borders the United States, the St. Lawrence is essentially a Quebec River—the inspiration and chronicle of history of the province within which lies five-sixths of its length, and in which also lie its greatest tributaries.

But especially is the St. Lawrence River remarkable in its influence upon Canada's trade and commerce. No other river in the world functions also as a coast line; no other country has inland ocean ports so far from the sea. From Montreal to Newfoundland the river forms a protected waterway almost a thousand miles long, unimpeded by any obstacle to navigation, bringing thereby ocean-going commerce almost one-third of the way to the centre of America.

It has been written of the St. Lawrence: "From the time of the French fur-trader, with his flotilla of birch-bark canoes loaded with furs from the interior, to the present day of the large lake vessels laden with grain from the prairies, it has been the avenue of civilization and the main artery of commerce."





THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

Looking east from Shed 12. This view shows the conveyor galleries on top of Victoria Pier.

The Historic City of
MONTREAL

ON a bright spring day nearly three hundred years ago, a Jesuit priest preached a sermon to a little company of colonists. They numbered only fifty-five—a pitiful handful to oppose to the rigours and the unknown terrors of the primeval forest that surrounded them!—and something of their apprehension, something of their regret at having left their homes across the ocean, must have been visible in their faces. So their priest gathered them around him and sought to hearten them. "You are a grain of mustard seed," he said, using the simile of the Master's parable, "that shall rise and grow till its branches overshadow the earth."

A monument now occupies that spot in Youville Square where Father Vimont spoke those brave words—where Paul de Chomedy (Sieur de Maisonneuve), Mademoiselle Jeanne Mance, Madame de la Peltrie and the first party of settlers of the Compagnie de Notre Dame de Montreal landed on May 18, 1642, pitched their tents, and celebrated Mass. They were not actually the first arrivals, for several pioneers had preceded them —notably Jacques Cartier, who 107 years earlier had sailed up from Quebec, discovered the village of Hochelaga, and climbed the mountain that lay behind the river-benches. Three-quarters of a century after him had come, in 1611, Samuel de Champlain, who, landing at a site which he called La Place Royale, endeavored to start a trading post and built a rude fort. Hochelaga by this time had disappeared, wiped out forever by hostile tribes, and its well-tilled maize fields laid waste.

But it was not until Maisonneuve's company arrived that any real attempt at settlement was made; and that settlement—named at the start "Ville Marie"—was so permanently established that it has continued ever since. Factories and ware-



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

shortly after Confederation, showing the type of vessels in use at that time. At the left side will be seen the general offices of the Harbour Commissioners which were completed in 1877

houses now look down on Youville Square: unending streams of laden vehicles now pass over its bordering streets: in outward semblance it has little to recall its origin as the birthplace of this proud Canadian metropolis. The city, indeed, has grown away from it, has spread fanwise out in great circles from its centre, leaving it and its neighboring narrow, steep, old historic streets—Notre Dame, St. Paul, and the rest—rather old-fashioned and unprepossessing. But it was the soil into which that grain of mustard seed was cast, and which nourished to harvest a mighty crop.

To see that crop, that result, climb to the top of Mount Royal, and view the encircling city lying below. Framed by the waving tree-tops of the lower slopes, by the gardens and lawns of McGill University, this picture encloses the lives and destinies of more than a million people. It shows the beholder one of the largest cities of this continent—a city as remarkable for its peculiarities of temperament, its mentality and its physical attractions, as for its commercial supremacy and fame.

Had one been able to stand there at different periods since 1642, the coup d'oeil varying from generation to generation would have offered an extraordinary chronicle of progress. It would have shown Ville Marie struggling up-hill from the beaches upon which it was first established, building forts, walls, the Hotel Dieu, the Congregation of Notre Dame, the Chateau de Ramezay. It would have witnessed the building of the first of the numerous churches and religious edifices whose spires and pinnacles now mark the skyline—of Notre Dame Church, the Grey Nunnery, the Seminary of St. Sulpice. Still later generations would have seen the beginnings of pleasant suburbs that later transformed themselves into industrial districts, as Montreal triumphantly marched up-hill, up-town, spread out north, south, east and west, broke out into newer suburbs that were soon caught up by the expansion of this restless, evergrowing city.

Stand here for a while, and pick out some of the landmarks. In a way they are an exposition of the soul of Montreal. Close in front are the cleaner and clearer lines of the hotels,



THE GROWTH OF A GREAT PORT

CHATEAU DE RAMEZAY

CITY OF MONTREAL

built in 1705, now maintained as a branch of the Archives of Canada; was a residence of the early Governors, both French and English

apartment blocks and uptown buildings. Commerce is catching up here: every year, almost every month, sees new sky-scrapers jagging the contours. Behind these are the dominating dome of St. James Cathedral, the castellated bulk of Windsor Station, the twin towers of Notre Dame, and the giant elevators at the dock side; but beyond the middle distance Montreal merges into a reddish-grey haze wherein it is hard to differentiate the multiple structures crowded against the river in the foreground, spreading out to the east and west and to the north in suburbs.

It is a scene which changes from year to year with man's activities, except, of course, for the St. Lawrence. That magnificent river, cutting through the middle distance like a silver knife, does not change from century to century. It is always the same—the artery and life blood of Montreal and of Canada. Sometimes a pall of smoke overhangs it: sometimes one can see across it as far as the mountains of Vermont or even the Adirondacks, but always it is the majestic, immutable waterway.

Descend from Mount Royal into the streets of the city, and what do you find is the crop of this grain of mustard seed? You find the largest city of Canada, the fifth largest city of North America, the fourth largest city of the British Empire outside of the British Isles. You find also, incidentally, the fourth largest French-speaking city of the world—for everyone knows Montreal's remarkable position as the bi-lingual metropolis of Canada's prosperous bi-lingual province of Quebec. It is a city that would have thrilled Attila or Tamerlane as being a rich city to sack—a city of material prosperity, throbbing with intense life, of inescapable significance wherever the trade, industry or commerce of Canada is concerned.

Big buildings, massive architecture, it possesses a-plenty. For educational facilities it is world-famous. Through its gates pass immigrants of a hundred nationalities, to its wharves come the flags of the Seven Seas. Through its hoppers flows the great stream of wheat that helps to feed all races, and through its



THE GROWTH OF A GREAT PORT

NOTRE DAME CHURCH

CITY OF MONTREAL

situated on historic Place d'Armes. The Church was founded in 1642. The present Church was opened in 1829.

hotels that other stream of almost equal importance, tourists. Of churches, amusements, sports, financial Gibraltars, stores, institutions to relieve the sufferings of the poor and afflicted, Montreal is a remarkable congeries, with a fascinating dualism of character because of its bi-lingual population.

Most of all it is rich in its hopes for the future of its never-ceasing growth, when it shall have two millions instead of one —a future that it faces with confidence and optimism.

Industry and Commerce of Montreal

MONTREAL, as befits its rank as Canada's largest city, is in the forefront of Canada's industrial development. Its annual production is enormous, and includes almost every line of manufacture. The principal industries are textiles (cottons, silks and woollens), meat-packing, flour-milling, sugar-refining, ship-building, the manufacture of boots and shoes, steel and iron, tobacco, cement, rubber goods, beer, paints, electrical goods, and confectionery. The city is also the virtual headquarters of the Canadian pulp and paper industry, which, while not actually situated in Montreal, is managed from there.

A marked characteristic of Montreal's industries is that they tend towards very large plants instead of a greater number of smaller factories. Typical of these are the big railway shops of the Canadian Pacific and Canadian National Railways, the chief producing plants of both systems. Montreal has the benefit of very cheap power, deriving it from sources on the St. Maurice River, the Richelieu River, and the St. Lawrence River.

Inevitably and because of its importance as a port, Montreal has become the financial and commercial centre of Canada. It is the headquarters of four great chartered banks, with a total capitalization exceeding $62,816,700. The bank clearings of 1926 for Montreal amounted to $5,646,347,421. Great insurance companies and trust companies also have their head offices here.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

This picture shows the Montreal of to-day
as seen from the top of Mount Royal.

A comparatively new but very important development in Montreal is that created by the remarkable influx of vacation or convention visitors from sister provinces, the United States, and other parts of the world. Drawn to Montreal by its savour of history and romance, its scenic beauties, its cosmopolitan spirit and other attractions which make it unique among the cities of the New World, the expenditures of these transient sojourners constitute an "invisible export" which is a considerable factor in the yearly volume of the golden tide which flows through the business and civic activities of the metropolis of Canada.





THE GROWTH OF A GREAT PORT

ST. JAMES STREET

CITY OF MONTREAL

In this section of Montreal are located many of Canada's greatest financial institutions.

MONTREAL *and its* HARBOUR

THE Metropolis of Montreal and its superb Harbour are inseparably linked in the foundation, the development and the history of the Dominion of Canada, for City and Harbour are interdependent, and without the two of them in conjunction Canada could never have reached its present state of progress and prosperity. City and Harbour supplement each other in the stupendous task of ministering to the commerce and industry of half a continent by the provision and the direction of transportation facilities on land and water, and by serving as the indispensable point of liaison between sea-borne trade to and from all parts of the world, the traffic of the mighty St. Lawrence River and the Great Lakes, and the rail-carried products of Nature or of man's artifice. If the inconceivable could happen and Montreal be taken from its Harbour or its Harbour from Montreal, not only would the other be left impotent, but the whole Dominion of Canada would be set back scores of years in its growth and its material well-being.

Many even of the citizens of Montreal do not realize the magnitude of the development which has taken place at their doors and almost under their eyes. Their knowledge of the growth and the extent of their port is limited to that gleaned by an occasional visit to one of the docks or by casual reading of press references to the constant succession of changes and improvements which within a few years have raised the Harbour of Montreal from a comparatively insignificant status to its present enviable place among the half-dozen greatest ports of the whole world. They know little or nothing of the marvellous detail and completeness of the facilities which have enabled Montreal to outstrip all rivals in the expeditious handling of record quantities of grain. They give no thought to the careful planning of new works which will eliminate any possibility of



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

ABOUT 1830

This historic view shows the wharf and shipping at that period.

congestion, no matter what proportion of America's wheat crop or manufactured products seeks this port as an outlet, or what huge bulk of supplies comes from abroad to meet the needs of the mid-section of the continent.

The topographical aspect of the miles of foreshore and basins embraced within the jurisdiction of the Board of Harbour Commissioners of Montreal has changed almost beyond recognition by those who only know the river as it was two decades ago. Those privileged to make a comprehensive tour of the port under expert guidance have full cause to thrill with a new sense of civic and national pride as they learn that this, that and the other structure, device or appliance can be truthfully described as the first, the only, the most modern or the largest of its kind in the world. But not alone by consideration of priority, size or uniqueness (which after all are not the truest or the final standards of comparison) can the achievements of the makers of the Harbour of Montreal be judged. The most notable and most impressive thing about the Harbour is the imponderable behind it all—the spirit of service, of efficiency and of prevision which has animated those who have planned and created it. This spirit was possessed by the far-sighted and resolute pioneers of the early part of the nineteenth century. It has been inherited by the present Commissioners in whose hands this great trust for the people has been placed, and by the men who under their direction execute the details of their planning or carry on the administration of this vast enterprise.

It would be a splendid thing if every Canadian could see with his own eyes what has been and is being accomplished on the waterfront of Montreal. That is manifestly impossible, but at least an effort can be made to inform the public of the vitally interesting history, the present stage of development and the virtually illimitable potentialities of the Harbour of Montreal, and it is the purpose of this book to record, although all too inadequately, something of the



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

This shows the various methods of transportation and shipping, also the water front in early days.

magnificent work done and still being done in the Harbour from which Montreal and the whole wide Dominion reap such substantial benefits.

Recognition of Montreal's strategic position as a key to the trade and transportation of the North American mid-continent dates back to pre-historic times. Less than half-a-century after Christopher Columbus sighted an island outpost of the New World, Jacques Cartier, first of recorded Europeans to ascend the St. Lawrence River beyond tidewater, landed upon the island later to be known by the same name—Montreal—as that borne by the city which occupies to-day a good half of its area. On and around the spot now forming the campus of McGill University, Cartier found the populous palisaded Indian town of Hochelaga, composed of some fifty large houses, each sheltering several families, the whole forming one of the largest permanent communities known to have been established by the aboriginal inhabitants of Canada before the coming of the white man. The untutored but astute redskin had realized, perhaps centuries before, that here was an ideal spot for his habitation, ideal for inter-tribal trade in peacetime, ideal for ease of defence against attack and for planning stratagems and launching assaults upon the foe in tribal warfare. Nearby was the confluence of two great rivers which were for him the pathways for the means of travel which he found least laborious and most expeditious, whether by birchbark craft in summer or over the level ice-locked surface in winter. One, the St. Lawrence River, led eastward to the sea and westward to the wonderful chain of rivers and lakes which terminated in "Gitchee-Gumee, the Shining Big-Sea Water," or Lake Superior. Another, the brown-hued Ottawa, penetrated the northern fastnesses rich in food-producing and pelt-bearing animals. Little wonder that from Hochelaga, the Indian town, Jacques Cartier carried back to France tales of romance, of waiting wealth and of a country lying fallow for Christianization that fired the imaginations of King and court, of noble and soldier and priest and nun and



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

This historic view shows the steam-boat wharf and shipping activity at the foot of Jacques Cartier Square and Commissioners' Street. This was one of two wharves which existed in 1840.

peasant, and led to the coming of the dauntless explorers, the hardy adventurers, the heroic missionaries and the devoted sisters who brought civilization to the newly-discovered terrain.

What the Indian had so early learned of the possibilities of defence offered by the future site of Montreal, the white man soon put to the proof. In 1611 came the chivalrous and heroic Champlain, who erected a fort to serve as an outlying defence for his newly-born city of Quebec, founded three years before. This fort Champlain used as a base for the explorations which led him down the lake now called by his name and up the tortuous route of land and water that took him by way of the Ottawa and the French River to Georgian Bay and back by inland streams and trails to Lake Ontario. Thirty-one years later Paul Chomedy de Maisonneuve and his little band of followers landed from their canoes near the site of Champlain's fort and, in the words of Pere Vimont, after celebrating the first Mass on the spot, planted the little mustard seed which was to grow to a great tree. The rude settlement thus established in the wilderness grew and flourished, and the very dangers and hardships which encompassed its early citizens seemed only to nurture them in courage and desire for discovery and devotion to the great adventure of carrying the Gospel and an enlightening civilization to the pagan aborigines. From Montreal went the missionaries Brebœuf and Lalemant to the self-imposed exile which terminated in a terrible but glorious martyrdom at the hands of the savage Iroquois. The infant metropolis was the starting point of the hardy soldiers and traders and priests who were the first to sail the long and uncharted reaches of the Great Lakes, the first to penetrate to the prairies of the West, the first to gaze upon Niagara Falls or view the "Father of Waters" and descend the Mississippi to its mouth, and their names or their mother speech endure in the cities—Detroit and Joliet, Marquette and Sault Ste Marie, Duluth and LaSalle and a score of others—of which they so well and truly laid the foundations.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

showing part of the harbour fleet comprising the Sir Hugh Allan and six harbour tugs.

With the gradual but constant growth of the infant city, the opening up of the interior country to trade, the changes brought about by the transfer of possession from France to England and the establishment of powerful fur companies in opposition to the Hudson's Bay Company with their headquarters at Montreal, the importance of the port grew with the progress of the city itself, and throughout the eighteenth century it was a prime factor in serving the needs of the colonists, French or British. Its usefulness, however, was restricted by the natural obstacles existing in the St. Lawrence River between Montreal and Quebec, which limited navigation to shipping of not more than 250 tons, and even these small vessels required skilful piloting to avoid the shallows and flats of Lake St. Peter and other portions of the river where at times the depth of water was but eleven feet. It was not until 1825, however, that the merchants of Montreal, aroused to the necessity of providing means for craft of larger tonnage to ascend the river by assuring a sixteen-foot channel all the way from Quebec, petitioned the Legislative Assembly of Lower Canada for a modest grant towards the accomplishment of that purpose. The petition was ignored, as were subsequent representations, and virtually nothing was done until 1850, when the Harbour Commissioners of Montreal, under the chairmanship of the Hon. John Young, now known as the father of the modern port, were granted permission to raise funds by loan and to undertake the work. This they did, and for nearly forty years ensuing the Harbour Commissioners were responsible not only for successive deepenings of the ship channel until it had attained a depth of 30 feet, but they also maintained the buoys and beacons as far down as Portneuf. In 1889 the Dominion Government assumed both of these obligations, and since then the Harbour Commissioners have been able to devote themselves entirely to the improvement and administration of the port, with the remarkable results that are apparent to-day.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

This view shows a vessel discharging Argentine corn at the marine jetty, loading Canadian wheat and taking bunkers at the same time.

The Harbour Commissioners

The Harbour of Montreal is operated by a Harbour Commission, a public body appointed by the Canadian Government. It consists of three members, they being the Hon. W. L. McDougald (Chairman), Dr. Milton L. Hersey, and Mr. Emilien Daoust. The executive administration of the Harbour is in charge of a General Manager under the direction of the Commissioners. The Commission has entire control over the Harbour, which consists of 32 miles of waterfront on the St. Lawrence River, with the shores on both sides from about half a mile above the Victoria Bridge to Bout de l'Ile, a distance of 16 miles.

The present status of the Port of Montreal is eloquent testimony to the fitness of the Commissioners for the onerous responsibilities with which they have been entrusted by the Canadian Government, to the consistency with which they have carried on the general policies laid down by their predecessors, and to the foresight and efficiency with which they themselves have inaugurated and brought to completion many new works demanded by the constantly developing ship traffic and port business.





THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

showing elevator No. 3 which has a storage capacity of 2,000,000 bushels of grain and will be ultimately increased to 14,000,000 bushels.

MONTREAL HARBOUR

~EXTENT *and* FACILITIES

Montreal's Geographical Position

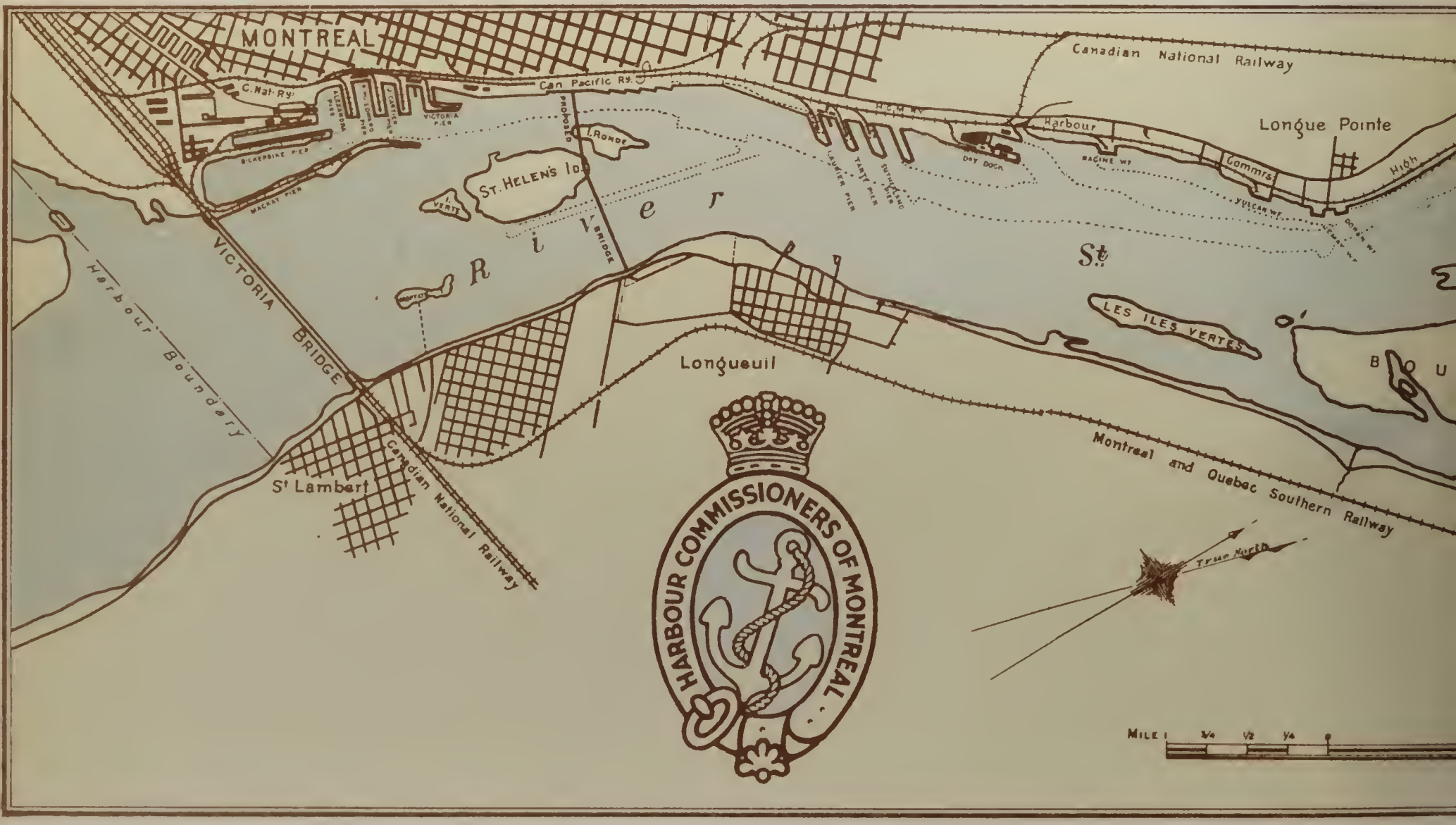
MONTREAL is the farthest inland harbour of importance in the world, standing at the head of deep-water navigation on the St. Lawrence. It is approached by a ship channel of 30 feet at low water, which is being increased to 35 feet, and is connected with a great canal and lake system of 1,600 miles of inland navigation extending to the heart of the North American continent.

Montreal is closer to Liverpool than any port in the United States, the distance in nautical miles from Liverpool to Montreal being only 2,760, as compared with: To Portland, 2,783; to Boston, 2,861; to New York, 3,043; to Philadelphia, 3,179; to Baltimore, 3,335; to New Orleans, 4,532; and to Galveston, 4,726. The distance to other European ports shows a similar advantage in favor of Montreal. Montreal is also the ocean port nearest to Central Canada, the prairie provinces, and the middle United States. The St. Lawrence Canal route to Montreal is 110 miles shorter than the American canal route to New York, and has a cargo capacity of 90,000 bushels per vessel unit, whilst that of the Erie Canal has only 53,000 bushels per unit.

The Ship Channel

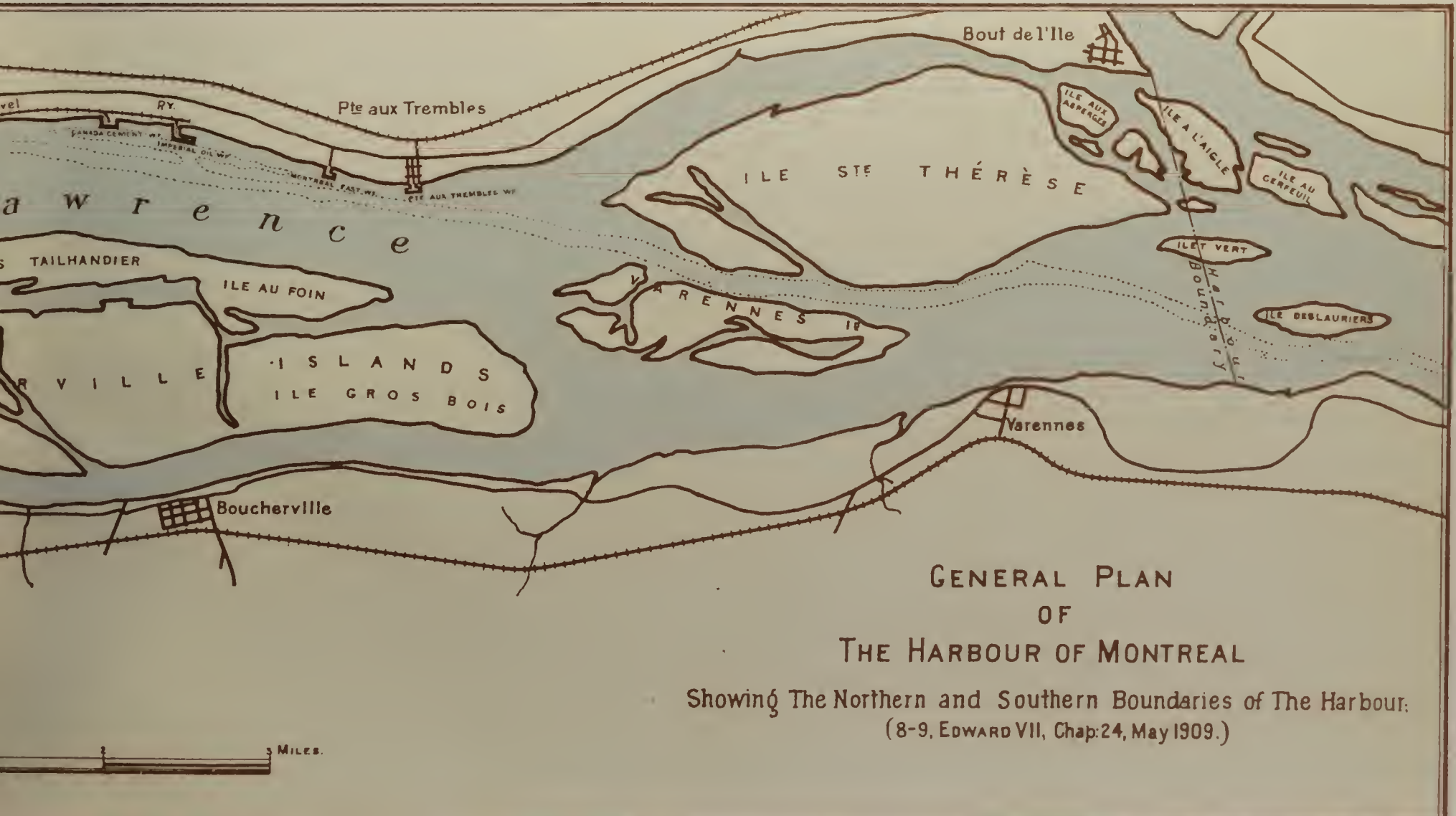
THE ship channel of the St. Lawrence River extends a distance of 210 statute miles from Montreal to South Traverse, 50 miles below the port of Quebec. Beyond South Traverse the St. Lawrence River has sufficient depth and width for any vessel. The general minimum depth of water in the ship channel between Montreal and Quebec varies from about 35 feet at high water in the tidal portions of the water to 30 feet at


CITY OF MONTREAL
LACHINE CANAL
WELLINGTON BASIN
WINDMILL POINT BASIN
BICKERDIKE PIER
MARKET BASIN
PLACE FIGER STATION
CANADIAN NATIONAL RY. YARDS
RIVER
ST. HELEN'S
ILE VERTE
MACKAY
VICTORIA BRIDGE
MOFFATS ISLAND
Season of Navigation
The Ordinary Open Season of Navigation is from April 25th to November 25th (seven months) and frequently lasts from April 20th to November 30th
Depth of Water
There are no Tides. The Harbour and River Level during the Season of Navigation is highest in May, giving an average depth of 36 feet in the 30 foot Ship Channel and lowest in October and November when the average depth is 34 feet 6 in.


MONTREAL
C. Nat. Ry.
Can Pacific Ry.
Canadian National Railway
Harbour
Longue Pointe
Commrs
High
VICTORIA PIER
BICERDIKE PIER
MACKAY PIER
PROPOSED
I. RONDE
ST. HELEN'S I.
I. VERTE
DRY DOCK
RACINE WF.
YULCAN WF.
LAURIER PIER
TARTE PIER
SUTHERLAND PIER
RIVER
St
VICTORIA BRIDGE
Harbour Boundary
LES ILES VERTES
Longueuil
St Lambert
Canadian National Railway
Montreal and Quebec Southern Railway
HARBOUR COMMISSIONERS OF MONTREAL
True North
MILE
3/4
1/2
1/4



PLAN OF THE SOUTHERN PORTION OF
THE HARBOUR OF MONTREAL



GENERAL PLAN
OF
THE HARBOUR OF MONTREAL

Showing The Northern and Southern Boundaries of The Harbour:
(8-9, Edward VII, Chap:24, May 1909.)



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

showing view of Elevator "B", capacity 3,500,000 bushels of grain, equipped with two-vessel unloading marine towers and car unloaders.

ordinary low water in the autumn. The channel has a minimum width of 450 feet throughout the straight portions, and from 550 to 750 feet at the bends. It is well marked throughout by buoys, light buoys and rangelights. Sea-going vessels pass up and down the river as freely by night as by day.

There are no difficulties of navigation from physical disturbances. The waters of the St. Lawrence, which are probably clearer and purer than those of any other inland waterway in the world, are unusually free from fog and storms.

Montreal is about 90 miles above tidal influence. An artificial embankment along the shore, 1½ miles long, protects the whole upper part of the harbour (including the entrance to the Lachine Canal) from river currents and spring ice-jams.

The Port of Montreal

THE Port of Montreal is the second largest port of America, surpassed in volume of business only by New York. It is the greatest grain-exporting port in the world.

During 1926, 136,000,000 bushels of grain were handled by the port and stored in the four great elevators maintained by the Montreal Harbour Commission. Of this quantity, nearly 127,000,000 bushels were exported. It is notable that 27% of the receipts was United States grain. A vast quantity of other commodities was handled, including coal, agricultural products, pulp and paper and general merchandise: statistics of these will be found on another page.

During the 1926 navigation season, 65,263 ocean-going passengers sailed from or arrived at Montreal.

Harbour Facilities

THE present facilities of the port may be briefly summarized as follows:—

Approximately nine miles of modern deep draft wharf, capable of accommodating 100 large ocean steamships.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

Aerial view of Victoria Pier and Basin.

The Sailors' Memorial Tower and

Sheds 18 and 19.

Four modern fireproof grain elevators, with a total storage capacity of over 15,000,000 bushels, from which grain can be delivered simultaneously at the maximum rate of 500,000 bushels per hour, while at the same time inland vessels and railway cars can be unloaded at the maximum rate of approximately 300,000 bushels per hour.

A cold storage warehouse of 4,628,000 cubic feet capacity, equipped and constructed on the most modern and hygienic principles.

Twenty-eight permanent fireproof two-storey transit sheds.

An electrified terminal railway system of about 70 miles operated by 100-ton electric locomotives.

A large floating crane of 75-ton capacity—this in addition to many locomotive cranes and the usual wharf service.

Excellent facilities for repair and docking of vessels up to 25,000 tons capacity.

Well-organized towing, lightering and fuelling services.

Three Sections of Harbour

THE main Harbour consists of three sections western, central and eastern. The western part comprises Windmill Point Basin, the entrance of the Lachine Canal, and the Bickerdike Basin. In this section is located the Harbour Commissioners' Elevator "B." Four large coal importing and bunkering plants are situated in this section, also two graving docks and one ship yard.

The central section of the Harbour comprises the Alexandra, King Edward, Jacques Cartier and Victoria Piers, all with two-storey steel transit sheds. The high level piers in this section are 1,250 feet long, separated by slips 550 feet wide. The Harbour Commissioners' Grain Elevators Nos. 1 and 2 are equipped with vessel-loading conveyors connected with every loading berth in this section.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

General view of Elevator No. 2, capacity 2,662,000 bushels, also King Edward Pier and Jacques Cartier Pier.

In the eastern section is included a long and partially developed length of shore-line, and it is here that the future development will largely take place. The high level wharves in the section are being added to by some 700 or 800 feet yearly. In addition to the Laurier and Tarte Piers, and Elevator No. 3, four coal-handling plants are located in this section, and also oil-receiving wharves, specially piped, together with a large ship-building and repairing plant.

The Grain Elevators

THE four great grain elevators will have a total capacity of 15,162,000 bushels, before the close of the season of 1927. The expeditious handling of grain is ensured by eleven mechanical grain car unloaders, making it possible to discharge eight cars per hour per unit as against the normal three-quarters of an hour per car by the old hand method. At the Windmill Point Wharf the first section of a new grain conveyor gallery was finished in 1926, providing for the handling of 60,000 bushels per hour. When complete, this grain conveyor will give the port an additional shipping capacity of one million bushels per 10-hour day.

Elevator No. 1 is the largest seaport elevator in the world. It is 530 feet long, 128 feet wide and 202 feet high and has a storage capacity of 4,000,000 bushels.

Grain can be received at this elevator from lake vessels and barges at the rate of 40,000 bushels per hour: it can also be received from cars at the rate of 36 cars per hour, while it can be delivered at the same time to ocean vessels at the rate of 75,000 bushels per hour.

Elevator No. 2, the first large terminal elevator building constructed entirely of reinforced concrete, is 457 feet long, 100 feet wide and 200 feet high, and has a storage capacity of 2,662,000 bushels. It is connected with Elevator No. 1 and can deliver grain over fifteen miles of rubber belting to all of



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

Barrelled apples in cold storage. Apples, cheese, butter, eggs, fresh meat, poultry and fish, etc., are efficiently handled in separate refrigerated rooms.

the twenty steamship berths in the central section at the rate of 150,000 bushels an hour.

Elevator No. 3, 640 feet in length, 80 feet in width and 200 feet high, has a storage capacity of 2,000,000 bushels and before the end of 1927 will have a storage capacity of 5,000,000 bushels. It is equipped with four car unloading machines, handling 28 cars per hour, and four marine towers where two lake boats can be unloaded simultaneously. It has eight conveyors extending along the Tarte and Laurier Piers, where five vessels can be loaded at one time, at the rate of 120,000 bushels per hour.

The extension to Elevator No. 3 now under construction, will provide additional storage capacity of 3,000,000 bushels, with full equipment for unloading grain from trains or lake carriers and reloading on ocean vessels. This extension, with three others to be made in the future, was included in the original plans for Elevator No. 3, giving an ultimate storage capacity of 14,000,000 bushels for this unit.

Elevator "B" has a storage capacity of 3,500,000 bushels, and conveyor galleries serving six shipping berths at the rate of 100,000 bushels per hour.

Cold Storage Warehouse

THE warehouse and Cold Storage Plant—which was completed in 1922—is located between the Central and Eastern sections, on the Harbour front. This warehouse is 440 feet long, 110 feet wide and 10 storeys high. Ten refrigerator cars may be switched into the plant adjoining the trucking platform; 10 others may be loaded or unloaded from a track outside the warehouse. Motor trucks or teams to the number of 30, all under cover within the walls of the building, may handle goods directly at the trucking platforms. The storage capacity of the entire plant amounts to 4,628,000 cubic feet.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

The Floating Crane, which has a lifting capacity of 75 tons, shown lifting a loaded car of coal from railway track and dumping coal on a harbour scow.

The warehouse is built of massive reinforced concrete, with brick curtain walls of the most modern design. Every known scientific device for efficiency and excellence has been provided. An air conditioning plant has been installed for use in each of the cold rooms. Four water towers are located on top of the building for the automatic sprinkler system. An artesian well, 1,100 feet deep, furnishes water of excellent quality of a temperature of 42° F. in summer. The power house and mechanical equipment are situated 50 feet distant from the warehouse, in a separate reinforced concrete and brick building with two fire walls.

The accommodation of the Cold Storage Warehouse is, during seasonal periods, utilized to the utmost extent for a great many perishable commodities passing both eastward and westward. Last year a successful test was made of the feasibility of handling fish from the Maritime Provinces destined for consuming points in the west and in the United States.

Public Services

THE water supply, power, lighting, scavenging and all other services on the wharves are controlled by the Harbour Commission. The Harbour is also well policed by the Commissioners' own constabulary service.

Dry Docks and Repair Plants

SHIPS' repairs and docking facilities are well provided for by a number of commercial firms located within the Harbour or in the vicinity, the most important utility being the floating drydock "Duke of Connaught," situated opposite Maisonneuve. This drydock is 600 feet long and 135 feet wide, and is capable of lifting a ship of 25,000 tons. A basin was provided by the Harbour Commission for this drydock, while on adjacent land a shipbuilding and repairing plant was installed.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

Aerial view of Floating Drydock, "Duke of Connaught," with large Liner undergoing repairs. Lifting capacity of this dock is 25,000 tons.

The Floating Crane

FOR the handling of heavy freight, such as machinery, the Port of Montreal is equipped with a floating crane, with a lifting capacity of 75 tons at a 54-foot radius. This crane has a length of 200 feet and a breadth of 43 feet, with a lift above water of 100 feet. An average of 2,000 lifts, approximately 10,000 tons, is made by this crane per year, the heaviest accomplished having been 85 tons.

For handling ordinary package freight from ship to shore, and vice versa, the ship's cargo-handling tackle is usually employed in the Port of Montreal, but to supplement this, and for situations where such a method cannot be used, the Commissioners possess a fleet of floating cranes ranging in capacity from 5 to 15 tons and six locomotives cranes of 10 to 15 tons lifting capacity.

The wharves total approximately 9 miles in length, and can accommodate one hundred ocean steamships varying in length from 350 to 600 feet. The principal liners berth at piers 1,250 feet long and fully 300 feet wide.

Transit Sheds

ALL of the liner berths are equipped with transit sheds, most of which are two-storey, although the sheds which accommodate the coastal and inland traffic are only one-storey. All two-storey sheds are equipped with vehicular hoists, making the upper floor practically as accessible for motor or team traffic as the ground floor. With the exception of a few which are devoted exclusively to general merchandise, all the sheds are equipped with grain conveyors, so that liners may receive their bulk cargo of grain without moving from their berths.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

Grain Elevator No. 1, Transit Sheds and Railway Tracks. There are eighteen two-storey sheds and eight single-storey sheds served by the Harbour Commissioners' electrified railway terminals consisting of 70 miles of track.

Towing, Barge Service, etc.

THE Harbour possesses a well-equipped dredging fleet, including tugs, derricks, scows and barges, which are available for the use of shipping when required, but towing in general is done by a large fleet of powerful tugs operated by a towing company.

Terminal Railway

THE Terminal Railway, with 70 miles of trackage, is adequately fitted for the transportation of incoming or outgoing merchandise or commodities to and from steamers. Included in its equipment are nine electric locomotives, each capable of hauling a 3,500-ton train at the speed of 16 miles per hour. Montreal Harbour was the first in the world to be electrified.

Fuel

IN the year 1926, 1,666,679 tons of bituminous coal and 200,438 tons of anthracite coal were delivered into the port. A great part of this is consumed in Canada, for industrial or domestic purposes, but not all. There is a steady increase in the bunkering of ships in port. Economical and rapid bunkering is a service of the highest value to shipping, and a factor of the first order in establishing the popularity of an ocean port. The Port of Montreal renders a bunkering service for both coal and oil second to none on the North American Continent.

The Grain Trade

MONTREAL, although open for only seven months of the year, has been the leading ocean grain port of the world since 1921. The statistical figures to be found at the back of this book demonstrate that last year the quantity handled



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

View showing three electric locomotives.
The Commissioners have nine of these
100-ton freight locomotives.

through this port was almost as much as the figures for the seven other grain ports of the Atlantic Coast and the Gulf of Mexico combined.

Montreal serves as the outlet not only for Canadian-grown grain, but also for a very considerable quantity of that grown and exported from the United States. Wheat grown in the Prairie Provinces of Canada is transported to Montreal by various routes:

(a) Via Rail and Water:

Rail from shipping point to head of the Great Lakes (Fort William or Port Arthur), thence via water to Montreal.

(b) Via Rail, Lake and Rail:

Rail from shipping point to the head of the Great Lakes, thence via water to the Georgian Bay ports (Midland, Depot Harbour, Tiffin, Owen Sound, Port McNicoll, Goderich or Port Colborne, thence by rail to Montreal.

(c) Via All Rail:

Rail from shipping point to Montreal.

Wheat grown in the Western United States follows one of these routes, except that it finds its first outlet at Duluth instead of at Fort William or Port Arthur.

One hundred and thirty-five million bushels of all grains were exported during 1926 through the Port of Montreal. This quantity of grain, if consigned by a single trainload, would require a train of ordinary box cars more than 650 miles long, containing 67,000 cars completely loaded with grain, and would require more than 1,340 locomotives to haul it. If it were forwarded by a fleet of lake vessels, such as ply all during the summer from Port Colborne to Montreal, there would be 1,700 such ships in the fleet, each one loaded to the gunwale with grain. To store this consignment at the port of transhipment, grain elevator accommodation equivalent to ten times as great as that now existing at Montreal would be necessary. To carry it overseas, 700 large cargo ships would have to be



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

Aerial view of Section 20, showing the Commissioners' magnificent cold storage warehouses, storage capacity 4,628,000 cubic feet. Also, at the right, refrigeration and electric power house.

chartered, and each one would be loaded to her 'tween-decks with bulk grain, and there would still be some left over.

These comparisons are impressive, but there is one to be made which is even more noteworthy and striking. Taking the wheat alone from all the various grains shipped, it is found that the 91,777,000 bushels of wheat which went out from the Port of Montreal in 1926 would produce 20,406,000 barrels of flour (exclusive of the millions of barrels of by-products). That quantity of flour would be sufficient to manufacture 3,674,080,000 loaves of bread, each weighing 1½lbs., or sufficient bread to provide one loaf per day for a year for more than ten million families!

Future of the Harbour

INCREASED business has steadily followed channel improvements and the provision of port facilities, and, as a matter of fact, only by pursuing a constant vigorous policy of construction has it been possible to keep the accommodation and facilities abreast of requirements. At the present time, many important works are in progress, such as the dredging out of the solid rock of the valuable area in the central harbour lying between the Bickerdike pier and the Mackay pier; the deepening of the Windmill Point Basin, and the replacement of the old wooden quay walls surrounding it by a new type of reinforced concrete crib; continued extensions of the shore wharves at Sections Nos. 32 and 40, and the installation of batteries of a new type of car unloader in Grain Elevators Nos. 1 and 2.

Not only has commercial success fully justified the development of the Port of Montreal up to the present time, but, as already stated, it has established beyond all doubt the strategic advantage of the position it naturally holds on this great transportation route and warrants expansion in the future on a very much larger scale than ever hitherto attempted. Fortunately, there is ample space for such expansion, as the harbour territory



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

Mechanical Car Unloader, of which there are eleven, each capable of unloading seven railway cars, each containing 2,000 bushels of grain per hour.

extends for sixteen miles on each side of the river, providing some thirty-two miles of shore line for development, of which less than nine miles on the west side has so far been utilized, and even that portion is by no means fully developed.

The Harbour Commissioners consequently have under contemplation a still greater enlargement of the grain storage facilities, a comprehensive scheme of additional berthing accommodation, including a number of new industrial wharves in the eastern section of the harbour, as well as the usual annual programme of minor improvements and extensions of existing works and facilities; and, at the same time, the deepening of the ship channel between Quebec and Montreal from thirty to thirty-five feet at low water is being vigorously proceeded with by the Department of Marine and Fisheries of the Dominion Government.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

This view shows British Anthracite Coal being unloaded by a battery of Travelling Cranes.

Passenger Services

THE Port of Montreal is not only the most important in the world in grain traffic; it is also a great and famous passenger port. To this the beauty and convenience of the St. Lawrence route—which gives two days of travel on sheltered waters—have very materially contributed; and its fame is such that not only is the St. Lawrence route the most logical one for Canadians going overseas, but is gaining rapid favor amongst Americans, who tend to regard Montreal as a half-way house to Europe.

Internationally-known steamship lines to Europe which make their Canadian passenger terminals here are the Canadian Government Merchant Marine, the Canadian Pacific, Cunard, the White Star-Dominion and the Anchor-Donaldson Lines; altogether, these lines operate many passenger vessels out of Montreal, the largest of which is the "Albertic" of 19,000 gross tons.

Passenger traffic at Montreal consists of several classes—principally commercial and tourist, for immigration traffic, which is inbound, is landed at Quebec. These classes run both ways, the tourist traffic of summer, which "going-over" is naturally heaviest in the earliest months, being balanced by the return of these vacation seekers in the fall. One reason for the popularity of the St. Lawrence route is that its passenger services have specialized in the "one-cabin" class of accommodation—which in effect gives first class accommodation for a somewhat lower price than first class. The development of the "tourist third cabin" type of travel has also seen the steamship companies make special endeavor to provide this class of accommodation, and has resulted in 1926 in large parties sailing for Europe by this means.

In 1926 three new large passenger ships were laid down in British shipyards for the Canadian passenger trade, one of which is now in service, while the others will be in 1928.

Besides its ocean passenger service, the port also provides excellent services both up and down the St. Lawrence River. Several



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

This view shows one of the popular Canadian Pacific Steamships' Atlantic Liners shortly after leaving The Port of Montreal.

widely-known companies, such as the Canada Steamship Lines and the Clarke Steamship Company, are engaged in this business. Up the St. Lawrence there are services to the famous rapids of the river, the still more famous Thousand Islands, Lake Ontario, Toronto, Hamilton and the Niagara Falls. Down the St. Lawrence, there are services to Quebec, Murray Bay, the Saguenay River, the Gaspe Coast, and Newfoundland, while another operates from Montreal to Bermuda. The passenger traffic over these lines is enormous.

The convenience with which Montreal can be reached by railway from any part of Canada or the United States, and the de luxe trains which make these fast runs, are distinct factors in the success of Montreal as a passenger port. Many thousands of passengers come from competing ports, such as New York or Boston, showing their preference for the comfortable and picturesque St. Lawrence Route and the shorter voyage to Europe.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

This fine aerial view shows one of the large Cunarders outward bound from Montreal.

Inland Rail *and* Water Service

THE map reproduced elsewhere in this book illustrates Montreal's unusual position at the convergence of rail and water transportation. A glance at this map will show that for purposes of navigation by ocean-going craft the St. Lawrence River is like a huge wedge driven into the continent of North America. Montreal occupies the tip of this wedge, and at the end of ocean navigation railway lines radiate in every direction.

Canada's two great railway systems, the Canadian National and the Canadian Pacific, make their headquarters here. Each of them has a vast system of over 20,000 miles of line, linking together the principal cities, industrial regions and agricultural and mining sections of the Dominion, as well as affording direct connection with the United States. An unsurpassed machinery of communication is thus provided for the trans-shipment of goods.

The main line of each system runs from Montreal roughly due west, passing through the country north of Lake Superior to Winnipeg, the fertile grain-growing prairies and the Rocky Mountains, and reaching Vancouver, on the Pacific Coast, a distance of almost 3,000 miles. Eastward, other lines serve Quebec, the lower St. Lawrence and the Maritime Provinces. But besides these main lines, others of scarcely lesser importance stretch out fanlike in other routes. One of the chief of these is south-westerly into the rich and prosperous province of Ontario, whose principal cities of Toronto and Hamilton are thus easily and directly reached within a few hours. Both freight and passenger services provided to and from Montreal are of a remarkably high standard as to frequency and time; and so far as freight services are concerned, there are direct switching facilities from the railways to the Port, so that cargo can be handled direct and without trans-shipment or loss of



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

This passenger fleet of boats and many others of this type ply the St. Lawrence upwards to the Great Lakes and below Montreal to the Gulf of the St. Lawrence.

time. The railway system of the Harbour Commission (to which reference is made elsewhere) connects with the big railways at their freight yards.

Four United States railway systems, using the terminal facilities of the Canadian railways, operate through trains direct into Montreal from New York and the New England States. The Canadian lines themselves cross the international boundary into the United States at Buffalo, Detroit, Sault Ste. Marie and other points.

What has been written of inland communications by rail is also true of communications by water. The St. Lawrence River above Montreal is not navigable for ocean-going steamships, partly because it has not been dredged out, partly because its course is impeded at several places by rapids. The latter, however, have been overcome by various canals which, by locking from the higher level to the lower, and vice versa, permit the passage of inland ships. These carry an enormous traffic up and down, principally in grain, particulars of which will be found in the statistical pages further on in this book.

The St. Lawrence system can be said to extend through the five Great Lakes, for one leads out of the other. The farthest-west lake, Lake Superior, is about 600 feet higher than sea level: but by a series of canals constructed by the Canadian Government, the principal of which are the Sault Ste. Marie Canal (at the junction of Lakes Superior and Huron) and the Welland Canal, built around Niagara Falls at the junction of Lakes Erie and Ontario, freight can be—and often is—shipped direct from Fort William, Port Arthur, or Duluth, at the head of Lake Superior, to Montreal without trans-shipment. A very considerable part of the grain handled through the Port of Montreal is of United States origin, exported through Buffalo.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

LAKE BOATS

View shows three Bulk Freighters that bring down grain from transfer ports, such as Port Colborne, on Lake Erie.

The LACHINE CANAL

ALTHOUGH the Lachine Canal is separate from the Montreal Harbour, and is administered direct by the Dominion Government, it is an integral part of the Port of Montreal, for it brings down to Montreal the river and lake traffic from the interior of Canada and the United States. Its purpose is to avoid the dangerous rapids which at Lachine make the navigation of the St. Lawrence River impossible except for specially designed steamers which carry passengers in search of a thrill.

The canal has been in operation since 1825, having several times been enlarged. The canal is 8½ miles long and 150 feet wide, with five locks each 270 feet long—two with a depth of 18 feet of water on the sills, and the remaining three with 14 feet. The locks are electrically operated and lighted. In the season of 1926, 6,197 vessels used this canal, carrying 3,000,000 tons of freight, the greater percentage of which was grain. The lower end enters the harbour through a series of basins near Windmill Point, the upper enters the St. Lawrence River near the east end of the city of Lachine.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

This view shows a Great Lakes Grain Freighter leaving the Harbour of Montreal and entering the first lock of the Lachine Canal.

Montreal Harbour Bridge

THE Montreal Harbour Bridge is a highway and tramway structure crossing the St. Lawrence River in the central portion of the Montreal Harbour Commission's administrative territory. Advantage is taken of the presence of various small islands in the river to found several piers on them, and at the same time the bridge will serve to assist in the development of these islands as municipal playgrounds, etc. The South Shore municipalities constitute a thriving suburban district, only needing better connection with the city to enable them to expand rapidly as residential and even manufacturing communities, while behind them to the south lie the farming counties which supply the metropolis with commodities, and through which run the provincial roads leading to and from the New England and Atlantic seaboard sections of the United States.

The bridge is designed to accommodate city and tourist traffic and to provide rapid transit for suburban dwellers. A roadway 37′6″ wide without obstruction gives four commodious lanes for automobile or other vehicular traffic and will permit fair speed being maintained in both directions. The tramway tracks are situated one on each side of the roadway, and are of open-deck construction except at special points. Adequate fence systems separate the tracks from the roadway and also from the sidewalks, which are placed on the outside. On the main span the trusses rise between the tracks and the sidewalks, but the greater part of the bridge is of the deck type, with all the supporting steel below the traffic surfaces.

The main span crosses the navigating channel and has therefore been designed to give a 162-ft. vertical clearance above high water for the central 500 ft. The total horizontal fairway for vessels is 1,000 ft. measured normal to the current and from the wharfside to the stonework of the river or east main pier. The



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

The new Harbour Bridge, the corner-stone of which was laid in 1926. This colossal structure, when completed, will be two miles in length and will further facilitate the development of the harbour, and will make the municipalities on the South Shore more accessible to Montreal.

resulting span is 1,097 ft. centre to centre of main piers, this portion being a cantilever structure with two 420-ft. anchor arms. The remainder of the steel superstructure is of ordinary dimensions and consists of 24 Warren truss spans on the east side over the shallow unused branches of the river from the so-called South Shore to and between the islands, and sixteen more spans on the city side. The latter are carried on 13 steel towers and two masonry piers, and are followed at the extreme end by six 32-ft. concrete arch-girder spans and a gravel fill within concrete retaining walls. At the extreme South Shore end beyond the shore abutment is a free embankment some 1,500 ft. long containing about 100,000 cu. yds. The steel spans run from about 90 to 245 ft. in length, there being 12 of the latter, and several of 122′6″. The panel length throughout all the deck truss section is kept constant at 24′6″, thus permitting considerable duplication in minor parts; stringers and fence panels being ordered by the thousand. The deck trusses are spaced 40 ft. apart on the piers and the tram tracks and sidewalks are thus cantilevered over each truss. The dimension outside to outside of outer fence posts is 73′3″. The depths centre to centre of truss chords vary from 13 ft. to 35 ft., so that the chord sections are quite uniform in area. The latter end is also ministered to by the use of Silicon steel for the truss members of the 245-ft. spans. Practically all other parts of the shorter spans are of Carbon steel rolled specially for the bridge to the engineers' specifications.

The geometry of the design was given much thought, and a pleasing outline is believed to have been obtained, appropriate to the unique situation of the structure in the very centre of Canada's metropolitan port. The height over the main piers is three times the depth of the suspended span, while the length of the latter is just over one-third of the total channel span. The trusses are 66′6″ apart on the piers, giving a very stable and well-proportioned whole.

The total weight of steel in the bridge superstructure will be almost exactly 30,000 short tons, to which the 1,937 ft. of



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

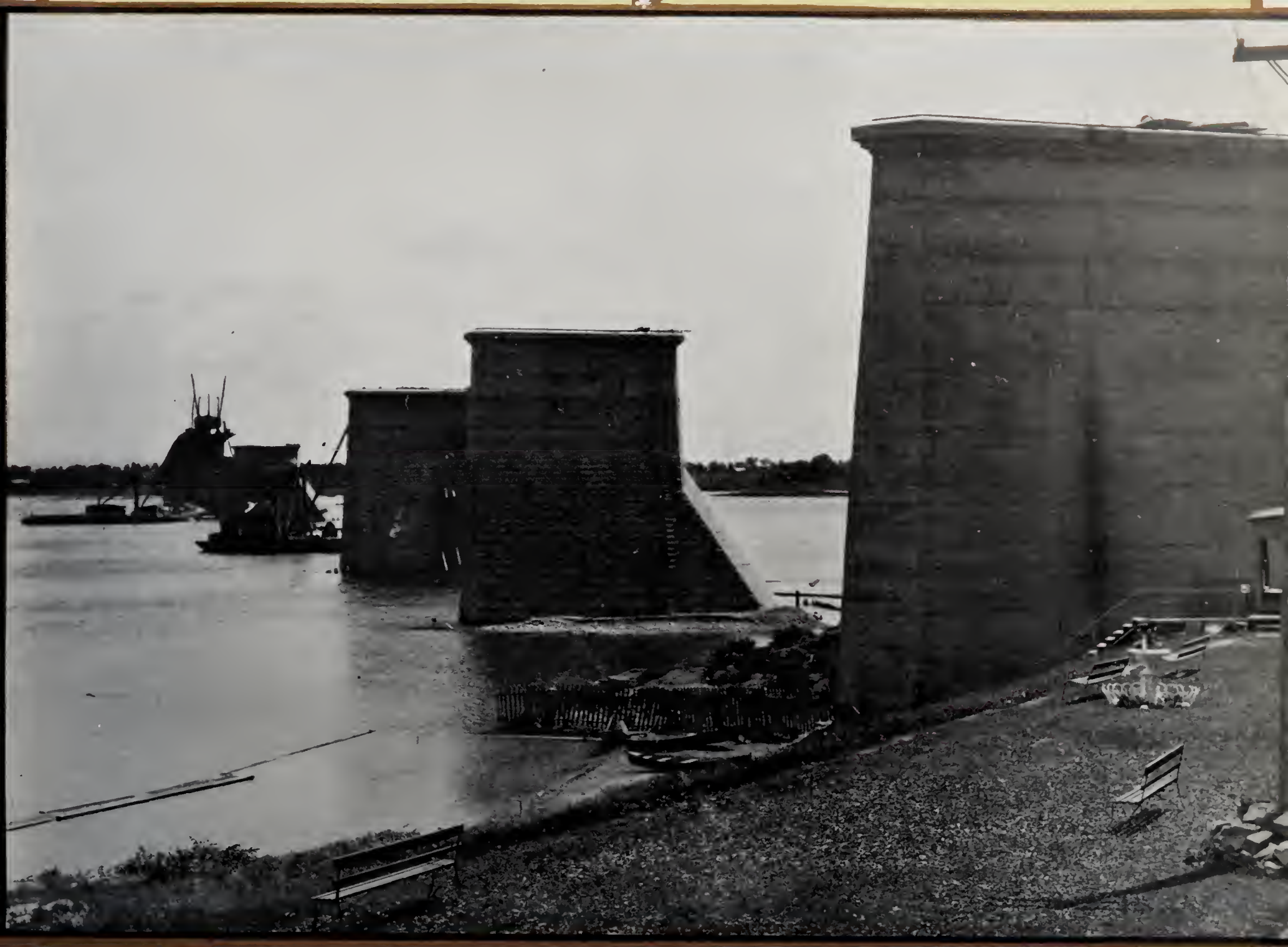
This picture, showing the construction on some of the piers of the new Harbour Bridge, is taken from the South Shore of the River St. Lawrence.

principal span contributes approximately half, and of course much the more expensive half. The first nine spans from the South Shore have already been erected except for minor parts, and this season will see erection advanee to include the 24 southern spans, and some 250 ft. of the city side anchor arm, probably 16,000 tons in all. The main span will be carried out from both sides toward the eentre when the anchorages have been connected, and cantilevering will be eontinued until the steel meets in the exact middle, no use of the river or the ice being permissible for bridge erection.

The substructure includes many varieties of pier-work, large and small, dry and wet, open crib and pneumatic caisson, rock, pile and hard-pan foundations, etc.

The bridge is loeated close to the centre of population in Montreal, with the main pier on Harbour property, and lands on the other side on Dominion Government ground, while the Islands are partly City and partly Government property. The City approach right-of-way had perforce to be acquired, and the precise site was somewhat determined by priees of land and buildings. When completed the bridge roadway will leave the street grades at Burnett Street, just west of Delorimier, but the final approach plaza or boulevard remains to be developed in conjunction with the City Engineering Department. The details of tramway operation are similarly not yet fully determined, but provision is being made to create a main stopping point for all tramway traffic on St. Helen's Island, where a small ramp will serve to give access to the Island Park. A recreation pavilion is being construeted at this point as part of the bridge project, the roof of whieh will be the bridge deek, the other floors being intended for various uses, such as auditoriums, entertainment rooms, eoncessions, ete.

The Montreal Harbour Bridge is the result of many years of debate, and will be Canada's most important highway crossing and one of the world's longest and most useful bridges. Two miles from entranee to exit, with a capacity ample for



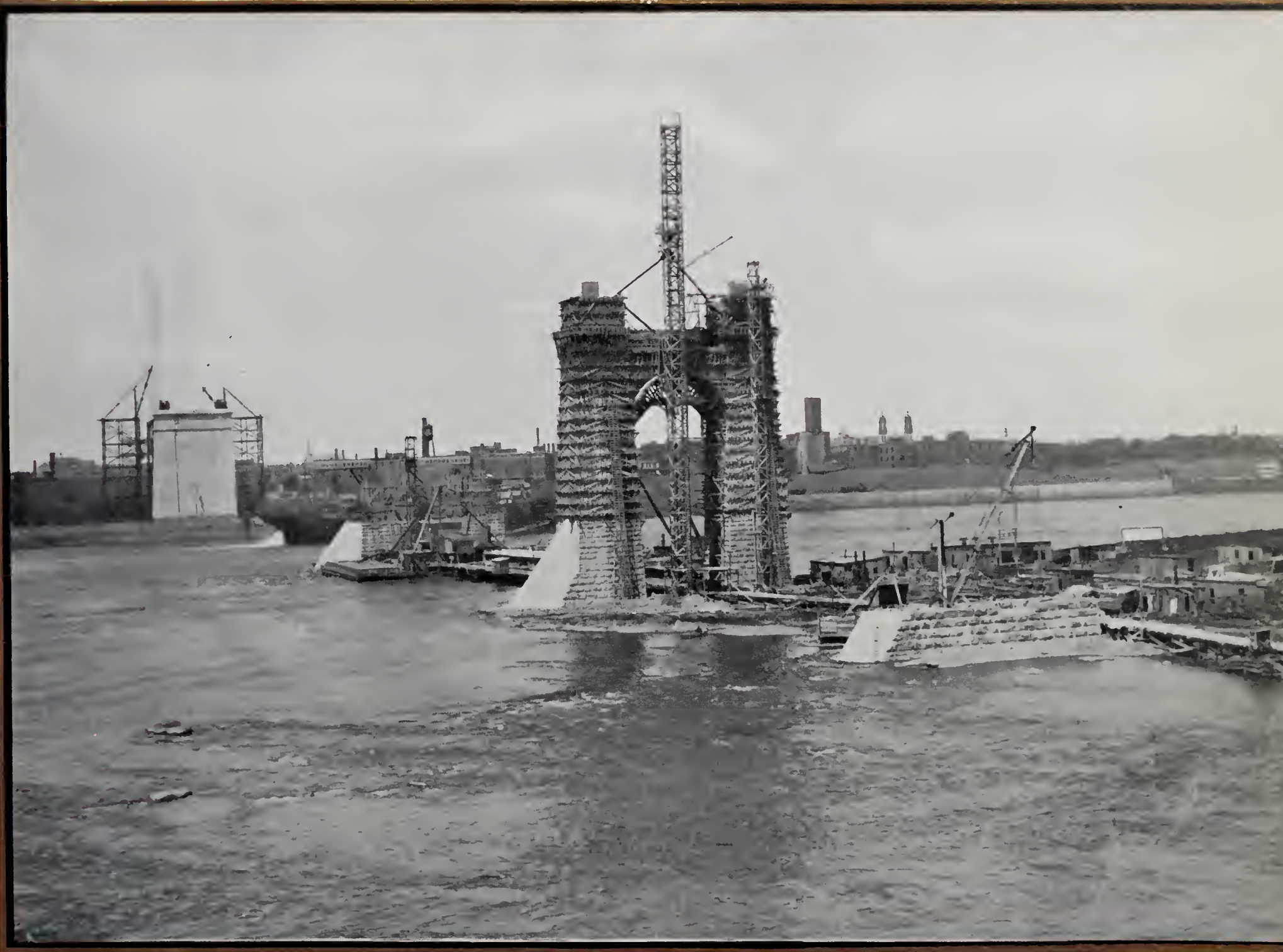
THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

Looking south from St. Helen's Island. This gives a view of the construction of the new Harbour Bridge between the Island and the South Shore of the River St. Lawrence.

many years, designed with proper regard to the traffic of the city's streets, this structure will exert a great influence in the development of the suburban district on the south side of the St. Lawrence River, and will be a popular highway for tourists coming to the Canadian metropolis, and for citizens to reach their country homes.

The Montreal Harbour Bridge is the only exclusively vehicular bridge between Niagara and the sea.



THE GROWTH OF A GREAT PORT

MONTREAL HARBOUR

This view shows the construction of the new Harbour Bridge towards the North or City Shore, as seen from St. Helen's Island.

Canadian

Grain Routes from T

The Head of The Lakes

FORT WILLIAM
PORT ARTHUR

273 Miles by Water

LAKE SUPERIOR

DULUTH

SAULT STE. MARIE

243 Miles by Water

237 Miles by Water

267 Miles by Water

332 Miles by Water to Detroit
389 Miles by Water to Toledo

LAKE HURON

GEORGIAN BAY

MIDLAND

OWEN SOUND

GODERICH

PORT HURON

237 Miles by Water

255 Miles by Water

LAKE ERIE

DETROIT

TOLEDO

CLEVELAND

LAKE MICHIGAN

MILWAUKEE

CHICAGO

HARBOUR COMMISSIONERS OF MONTREAL

Ports. ——

e Head of The Lakes. ——

QUEBEC

To Liverpool, 2,760 Miles (Nautical)

THREE RIVERS

SOREL

To St: John
482 Miles by Rail

LACHUTE

MONTREAL

OTTAWA

MATTAWA

AY

CH RIVER
BOUR

PEMBROKE

381 Miles by Rail

RENFREW

297 Miles by Rail

PARRY SOUND
EPOT HARBOUR

383 Miles by Rail

469 Miles by Rail

PRESCOTT

PORTLAND

PORT McNICOLL

KINGSTON

PORT HOPE

369 Miles by Water

LAKE ONTARIO

OSWEGO

ERIE CANAL

BOSTON

SYRACUSE

ALBANY

RT
RNE

BUFFALO

495 Miles by Water from Buffalo to New York

NEW YORK

To Liverpool, 3,036 Miles (Nautl.)

Scale. 75 Miles = 1 inch.

STATISTICAL INFORMATION

HARBOUR COMMISSIONERS OF MONTREAL

1927

The Port of Montreal

Some Statistics

In 1926 the Port was open for navigation for 218 days, two weeks shorter than 1925. The first ocean-going vessel arrived May 3rd—the last cleared December 6th.

Ocean-going Vessels entering the Port:

Year	Number	Registered Tons
1926	1,042	3,551,489
1925	1,040	4,744,793
1924	988	3,597,147
1923	892	3,221,781
1922	969	3,453,059

Vessels to and from the St. Lawrence River and Gulf:

Year	Number	Registered Tons
1926	379	670,241
1925	215	359,520
1924	235	499,185
1923	190	461,939
1922	225	479,578

Vessels to and from Inland points:

Year	Number	Registered Tons
1926	6,197	12,445,594
1925	5,957	9,678,163
1924	5,791	11,215,764
1923	5,609	8,195,308

Deliveries of Grain to ocean-going vessels, 1926:

	Bushels
Wheat	89,692,782
Barley	15,486,156
Rye	7,435,588
Oats	12,130,927
	124,745,453—3,471,888½ tons

These figures do not include exports by rail to winter ports.

Destination of 1926 grain exports:

	Bushels		Bushels
Great Britain	39,291,763	Portugal	1,447,490
Holland	20,709,601	Brazil	431,232
Germany	17,125,725	South Africa	376,820
Belgium	14,654,583	Finland	289,154
Italy	12,946,461	Algeria	261,333
France	5,758,005	Denmark	210,667
Norway	3,726,820	Sweden	192,700
Greece	2,496,975	Malta	55,453
Ireland	1,487,672	Unknown	3,282,980
			124,745,453
		Winter Ports	11,152,429

The shipments to Brazil, Algeria and Malta were the first made direct to those countries.

Volume of Grain handled at the Port:

Year	Bushels
1926	135,000,000
1925	166,139,179
1924	165,139,399
1923	120,107,990
1922	155,035,817

Grain handled by the other ports of the Atlantic Coast and Gulf of Mexico, 1926:

New York	75,465,000	Philadelphia	6,547,000
Galveston	31,203,000	Boston	3,639,000
Baltimore	20,314,000	Norfolk, Va	115,000
New Orleans	8,892,000		146,175,000

Montreal in 1926 thus handled within 11,000,000 bushels of all the other ports combined.

Other Merchandise handled by the Port of Montreal in 1926:

Cheese	1,191,481 boxes	Paper	27,833 tons
Butter	112,133 boxes	Lard	48,378 tons
Eggs	53,832 cases	Hay	17,045 tons
Apples	731,143 boxes	Flour	326,180 tons
Apples	782,148 barrels	Foreign coal (imported)	176,000 tons
Cattle	30,582 head	Nova Scotia coal (imported)	1,429,194 tons
Pulp	22,980 tons		

Of the total 1,421 ocean-going ships which came to the Port, 985 were British, and had a total net registered tonnage of 3,262,116 tons, while the United States was second with 183. Ninety-six Norwegian ships, fifty-eight Dutch, forty-three Italian, seventeen Danish, ten French and ten Greek were included amongst the total, and altogether fifteen nationalities were represented, the whole manned by 78,151 seamen.

The tonnage of merchandise handled in and out and over the wharves of the Port during 1926 totalled 9,210,699 tons.

HARBOUR OF MONTREAL

SUMMARY OF GRAIN RECEIPTS—ELEVATORS 1, 2, 3 and "B"

	WHEAT		OATS		BARLEY		CORN		RYE		FLAX	OTHER	TOTAL
	Can.	Amer.	Can.	Amer.	Can.	Amer.	Arg.	Amer.	Can.	Amer.	Can.	Can.	Bushels
Jany	2,068		57,756		54,446			27,291				6 075	147,636
Feby.	19,318		57,197		12,027			17,266				2,650	138,458
March	14,160		16,554		60,398			25,622					116,734
April	10,170	19,990	156,431		54,037			35,300	6,582			1,199	343,709
May	9,225,251	4,858,952	3,590,265	1,241,391	1,880,888	69,894		110 043	5,278	1,838,552		30,559	22,881,073
June	14,718,006	3,316,150	4,212,091	261,845	2,369,732			101,509	193,693	1,464,948		62,204	26,733,148
July	6,910,461	1,581,347	5,125,103		2,952,330		363,395	44,779	48,230	2 068,287	50,326	1 066	19,145,324
August	4,604,656	1,923,902	1,801,129	4,691	2,327,546		126,331		168,422	926,795	68,756	6,094	11,961,322
Sept	6,624,697	6 095,165	734,841		1,410,105	1,095,683			1,285	259,405	96,274		16,314,455
Oct	11,634,438	3,912,459	8,933		1,321,302	441,523	336,907	66,043	3,040	1,337,474	99,430	4,278	19,165,827
Nov	10,962,510	2 502,233	208,664		2,959,941	91,281	353,491	142,759	17,066	287,198	75,823	1,182	17,602,148
Dec.	758,263	73,216	188,732	2,342	64,855			72,123	184,978			3,542	1,348,051
	65,510,998	24,313,414	16,190,693	1,513,269	15,497,607	1,698,381	1,480,124	672,735	628,574	8,182,629	390,669	148,849	135,897,882

SUMMARY OF GRAIN DELIVERIES—ELEVATORS 1, 2, 3, and "B"—1926

	WHEAT		OATS		BARLEY		CORN		RYE		FLAX	OTHER	TOTAL
	Can.	Amer.	Can.	Amer.	Can.	Amer.	Arg.	Amer.	Can.	Amer.	Can.	Can.	Bushels
Jany	91,792	20	80,452		27,764		10,963	19,826	1,690			7,719	240,226
Feby	124,249		91,772	2,000	30,080		3,251	21,927	12,730			4,609	287,618
March	45,064	6,716	122,100	41,412	42,914		5,857	31,175	14,000			3,207	312,445
April	225,538	20,908	245,551		151,918		1,342	39,876	9,585			4,151	698,869
May	10,853,290	4,310,935	2,697,586	801,981	2,059,127	80,725	2,346	72,350	84,994	1,874,573		8,943	22,846,850
June	12,769,178	3,467,965	4,044,021	572,823	2,254,987	684	9,968	78,668	58,437	891,207		55,161	24,161,699
July	7,215,716	2,079,210	4,030,722	344,890	2,882,219		113,774	48,147	190,474	1,175,322	50,326	21,141	18,152,941
August	6,111,002	2,034,752	1,184,613	69	1,662,864		185,305	41,671	400	311,591	68,756	13,934	11,614,957
Sept	7,359,133	5,197,860	714,796	4,691	1,654,547	924,650	104,665	44,887	9,359	746,572	96,274	3,001	16,860,435
Oct	10,884,873	3,762,674	596,934	5,000	1,216,401	509,855	268,716	32,050	1,600	1,093,579	39,965	1,446	18,413,093
Nov	10,761,381	3,316,894	671,984	6,919	2,680,780	64,607	237,599	49,555	18,243	1,069,241	105,229	3,778	18,986,210
Dec.	889,866	245,418	257,427		384,046	204	88,265	51,589	6,600	30,000	30,059	2,423	1,985,897
	67,328,382	24,443,352	14,737,958	1,734,785	15,048,647	1,580,725	1,032,051	531,721	408,112	7,225,085	390,609	129,813	134,591,240

Statement showing classification of Vessels that arrived in Port, for the past ten years, from the Lower St. Lawrence and Maritime Provinces and Newfoundland

Year	Steamships		Schooners		Grand Total.	
	No.	Tonnage	No.	Tonnage	No.	Tonnage
1917	34	23,635	34	2,899	68	26,534
1918	18	20,589	12	2,272	30	22,861
1919	62	134,971	22	2,671	84	147,642
1920	19	10,724	6	486	25	11,210
1921	151	292,870	6	592	157	293,462
1922	223	479,333	2	245	225	479,578
1923	187	461,645	3	294	190	461,939
1924	231	498,903	4	282	235	499,185
1925	215	359,520	..	..	215	359,520
1926	379	670,241	..	..	379	670,241

Combined Statement showing the number and tonnage of all vessels that arrived in Port during the past ten years.

Year	TRANS-ATLANTIC		MARITIME PROVINCES AND NEWFOUNDLAND		INLAND		GRAND TOTAL	
	Vessels	Tonnage	Vessels	Tonnage	Vessels	Tonnage	Vessels	Tonnage
1917	579	1,984,233	68	26,534	6,274	3,206,542	6,921	5,217,309
1918	644	1,910,621	30	22,611	6,102	3,313,908	6,776	5,247,390
1919	702	2,041,638	84	137,642	7,499	4,357,734	8,280	6,537,014
1920	638	2,020,519	25	11,210	4,403	4,287,714	5,066	6,319,443
1921	807	2,598,494	157	293,462	4,577	6,843,494	5,541	9,735,450
1922	969	3,453,059	225	479,578	5,789	9,157,062	6,983	13,089,699
1923	892	3,221,781	190	461,939	5,609	8,195,308	6,691	11,879,028
1924	988	3,597,147	235	499,185	5,791	11,215,764	7,014	15,312,096
1925	1,040	4,744,793	215	359,520	5,957	9,678,163	7,212	14,782,476
1926	1,042	3,551,489	379	670,241	6,197	12,445,594	7,618	16,667,324

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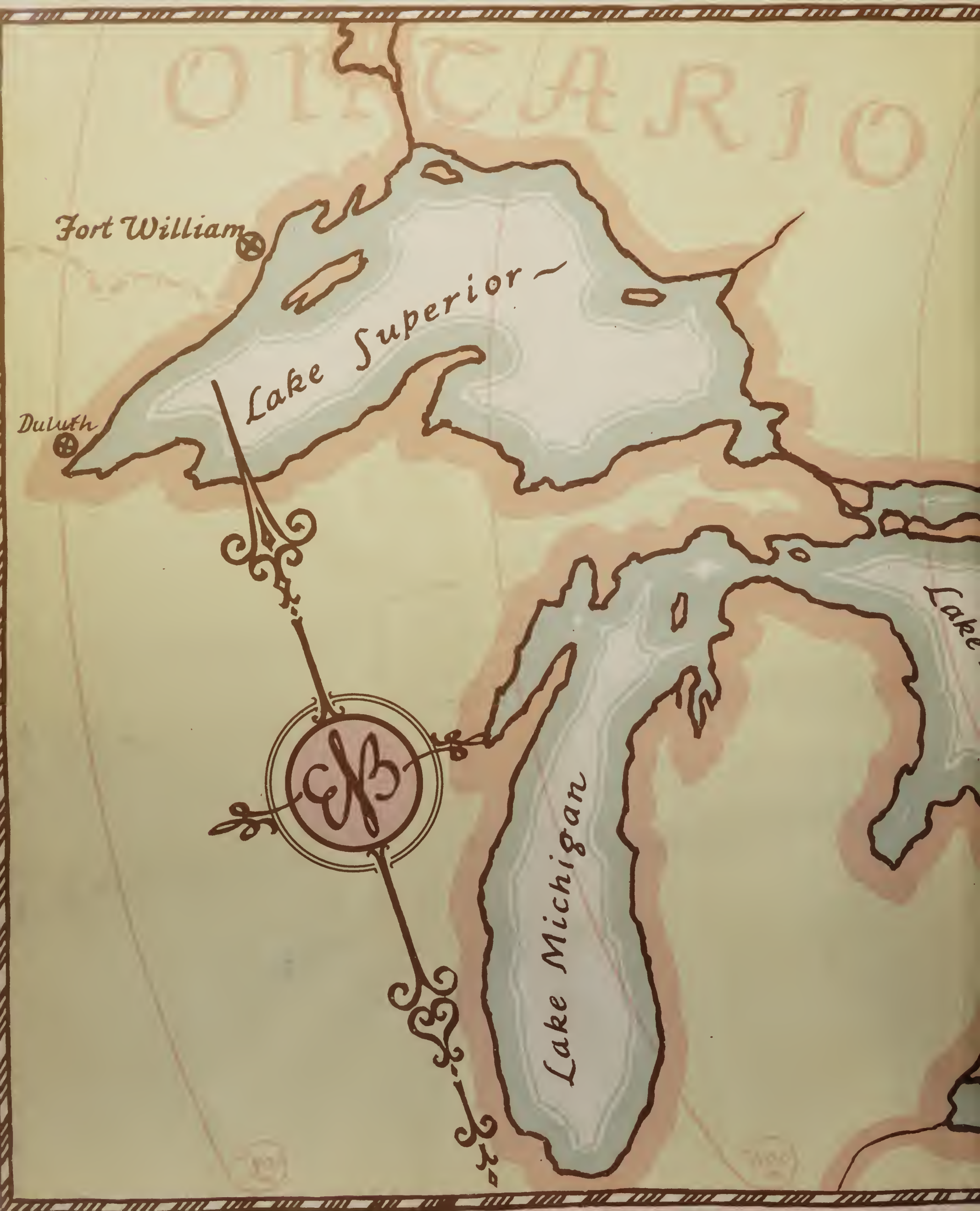
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